

**REMARKS**

Claims 1-27 have been canceled, claim 28 has been amended, and claims 29-40 have been added. Claims 28-40 are pending in the application.

The changes made to the claims are being made solely to expedite prosecution of the present application and do not constitute an acquiescence to any of the Examiner's rejections. In particular, claim 28 has been amended to more distinctly claim the invention, and the support for such a change can be found, for example, on page 16, line 35 to page 17, line 2. This change is necessary to make the roughness value clear. No new matter has been added.

New dependent claims 29-40 have been added to more distinctly cover a preferred embodiment of the present process. Claims 29-39 find support throughout the application and in original claims 15-27, and support for claim 40 can be found, for example, on page 16, lines 29-35. No new matter has been added.

In view of the above amendments and the following remarks, the applicants respectfully request favorable reconsideration and allowance of the application.

The sections set forth below are presented in the same order as that of the Action for ease of reference.

Election/Restriction

The final Office Action recites that appropriate action must be taken regarding claims 18-23, drawn to a non-elected invention with traverse, in the present response. Claims 15-27 have been canceled, and new dependent claims 29-40 have been added. New dependent claims 31-36 find support in original claims 18-23, and for the reasons recited below the applicants respectfully assert that claim 28 is patentable over the cited art. Since claims 29-39 depend directly or indirectly from independent claim 28, they should also be allowable.

Claim Rejections

## 35 U.S.C. § 102(b)

Claims 14, 15, and 27 were rejected under 35 U.S.C. § 102(b) as being anticipated by Moriceau.

Claims 14, 15 and 27 have been canceled herein, and thus this rejection is now moot.

## 35 U.S.C. § 103(a)

Claims 14 and 24-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Okonogi in view of Moriceau and Ghandi.

Claims 14 and 24-26 have been canceled herein to moot the rejection.

Claim 28 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Malik in view of Aga. The applicants hereby traverse this rejection.

In particular, claim 28 is directed to a process for treating microelectronic or optoelectronic substrates that have a working layer with a free surface. The process includes annealing the substrate under a reductive atmosphere that includes hydrogen for less than 3 minutes at a temperature between 1100 and 1300°C to assist in smoothing of the free surface. This is followed by chemical mechanical polishing of the free surface to provide it with a final rms roughness of between 0.8 and 1.5 angstroms measured during scanning of a 1 x 1  $\mu\text{m}$  area so that it is ready for further processing.

Malik discloses an optional pre-smoothing step (see paragraph 53 and Fig. 3 of Malik), and touch-polishing to smooth a composite substrate. However, as noted in paragraph 18 of the final Action, Malik does not teach or suggest annealing a substrate under a reductive atmosphere that includes hydrogen for less than 3 minutes at a temperature between 1100 and 1300°C to assist in smoothing. He does not disclose these parameters since he is merely mentioning an optional step for which the conditions are not at all critical. In contrast, applicants have claimed specific process conditions that result in favorable treatment of the substrate to facilitate the subsequent smoothing step. Malik discloses none of this, so that the Aga reference was cited to remedy these deficiencies.

Aga teaches to use rapid thermal annealing of an SOI wafer to reduce Crystal Originated Particles (COPs) in the final SOI layer. COPs are one type of crystal defect introduced during crystal growth within SOI wafers that cause degradation of electrical characteristics of the wafer and adversely affect the device fabrication process (see Aga, col. 2, lines 13-15, 25-27 and 35-39). In contrast to the annealing step recited in claim 28, Aga teaches to use rapid thermal annealing to reduce COPs in the SOI layer to obtain an SOI wafer having excellent electrical characteristics and acceptable device fabrication properties (see col. 3, line 55 to col. 4, line 11). Accordingly, Aga does not suggest or teach a method of annealing to assist in smoothing as recited in claim 28, and thus no reason exists for one skilled in the art to use the teaching of Aga for that purpose.

Since the technique disclosed by Malik solves a problem that is different than the problem solved by Aga's process, one skilled in the art would not combine them. Therefore, the combination of Malik and Aga is not proper because there is neither a motivation to combine their teachings, nor a reasonable expectation of success of such a combination. The applicants thus respectfully assert that claim 28 is patentably distinct from Malik and Aga, either taken alone or in combination.


In view of the above remarks, the withdrawal of the 35 U.S.C. § 103(a) rejection of claim 28 is requested. Since claims 29-40 depend directly or indirectly from independent claim 28, they should also be allowable for at least the same reasons.

### CONCLUSION

On the basis of the foregoing Amendment and Remarks, the applicants respectfully assert that this application is in condition for allowance. Should the Examiner not agree that all pending claims are allowable, then a personal or telephonic interview is requested to discuss any remaining issues and expedite the eventual allowance of these claims.

Respectfully submitted,

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Allan A. Fanucci (Reg. No. 30,256)

**WINSTON & STRAWN LLP**  
CUSTOMER NO. 28765

(212) 294-3311